

Environmental Impact of Breastmilk Substitutes – the Carbon Footprints of Infant Formula

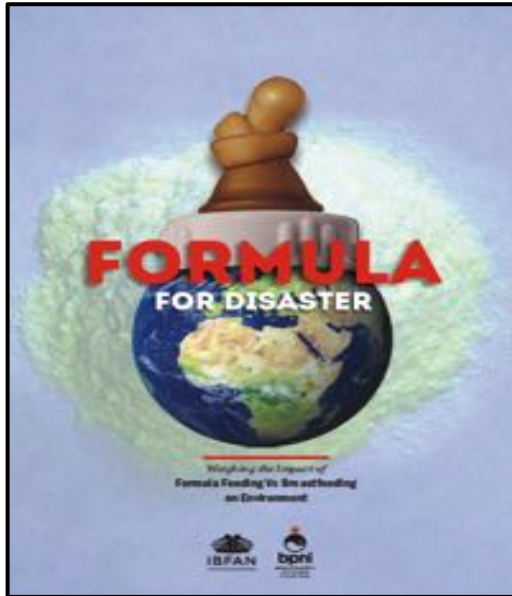
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Breastfeeding Promotion Network of India

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**3rd World Breastfeeding Conference, Rio de Janeiro, Brazil
11-15 November, 2019**

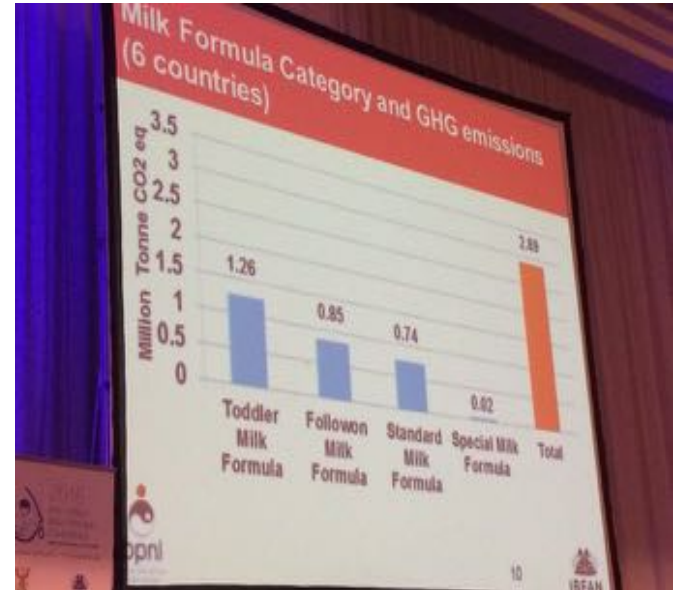
Recognizing Environmental Impact of BMS Use



2014

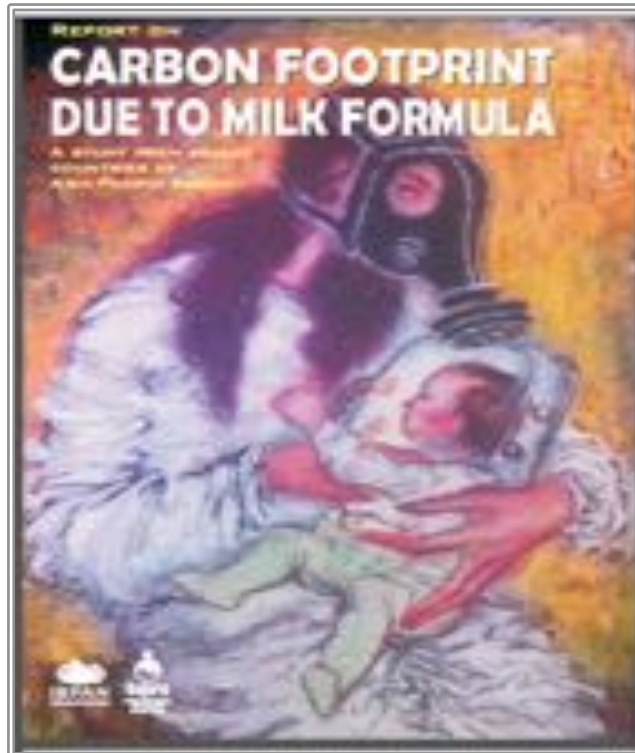


2015



2016

Average GHG Emissions (kg CO₂ eq) per kg of different category of Milk Formula



**Standard Milk
Formula/Special
Milk Formula**

3.95 kg Co₂ eq per kg

**FU Milk Formula/
Toddler's Milk Formula**

4.04 kg Co₂ eq per kg

Recognition by Researchers – Lancet Series on Breastfeeding 2016

Breastmilk substitutes leave an ecological footprint –

- Need energy and water to manufacture
- Materials for packaging
- Fuel for transport distribution
- Water, fuel, and cleaning agents for daily preparation and use

Rollins NC, Bhandari N, Hajeerbhoy N et al. Why invest, and what it will take to improve breastfeeding practices? Lancet. 2016;387(10017):491-504.



Publications in Peer-reviewed Journal 2019

Breastfeeding has lower CFs than BMS

“..This was true for all four countries studied in the assessment: **UK, China, Brazil and Vietnam**, where the impact of breastfeeding was **40%, 53%, 43% and 46%** lower, respectively, than that arising from using BMS..”

Karlsson JO, Garnett T, Rollins NC, Rööf E. The carbon footprint of breastmilk substitutes in comparison with breastfeeding. J Clean Prod. 2019 Jun 10;222:436-445.



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Recognition by Researchers – BMJ Editorials 2019



BMJ 2019;367:f5818 doi: 10.1136/bmj.f5818 (Published 2 October 2019)

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EDITORIALS

Support for breastfeeding is an environmental imperative

Formula milk contributes to environmental degradation and climate change

Naomi Joffe technician and environmental lead, Flic Webster milk donor, Natalie Shenker researcher

Hearts Wilt Bank, Richmond Institute, Hertfordshire, UK



BMJ 2019;367:f5818 doi: 10.1136/bmj.f5818 (Published 4 October 2019)

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EDITOR'S CHOICE

Infant formula, the environment, and *The BMJ*

Fiona Godlee *editor in chief*

The BMJ

When we stopped taking advertisements for breast milk substitutes earlier this year, it was because of the many ways in which the producers of infant formula have undermined breastfeeding around the world (doi:10.1136/bmj.11200). We

to mother and child, we have to do better for health and the environment.

What of *The BMJ's* own environmental impact, and in particular the words, not actions? What of the paper print and



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Community voices - Extinction Rebellion Mother's March in London – October, 2019



<https://www.dailymail.co.uk/news/article-7554245/Extinction-Rebellion-mothers-stage-mass-breastfeeding.html>

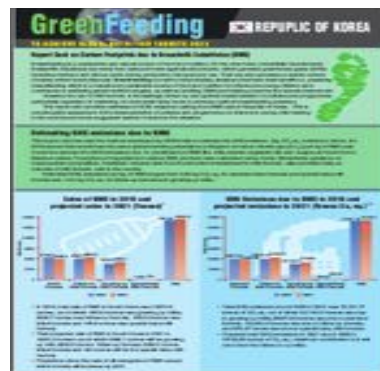
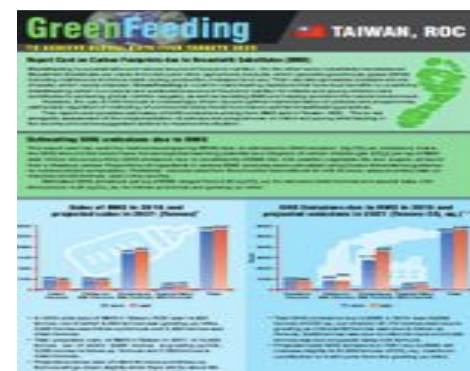
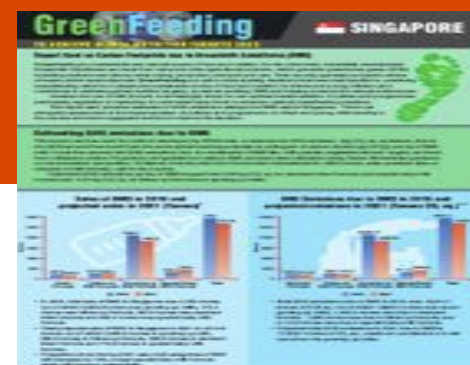


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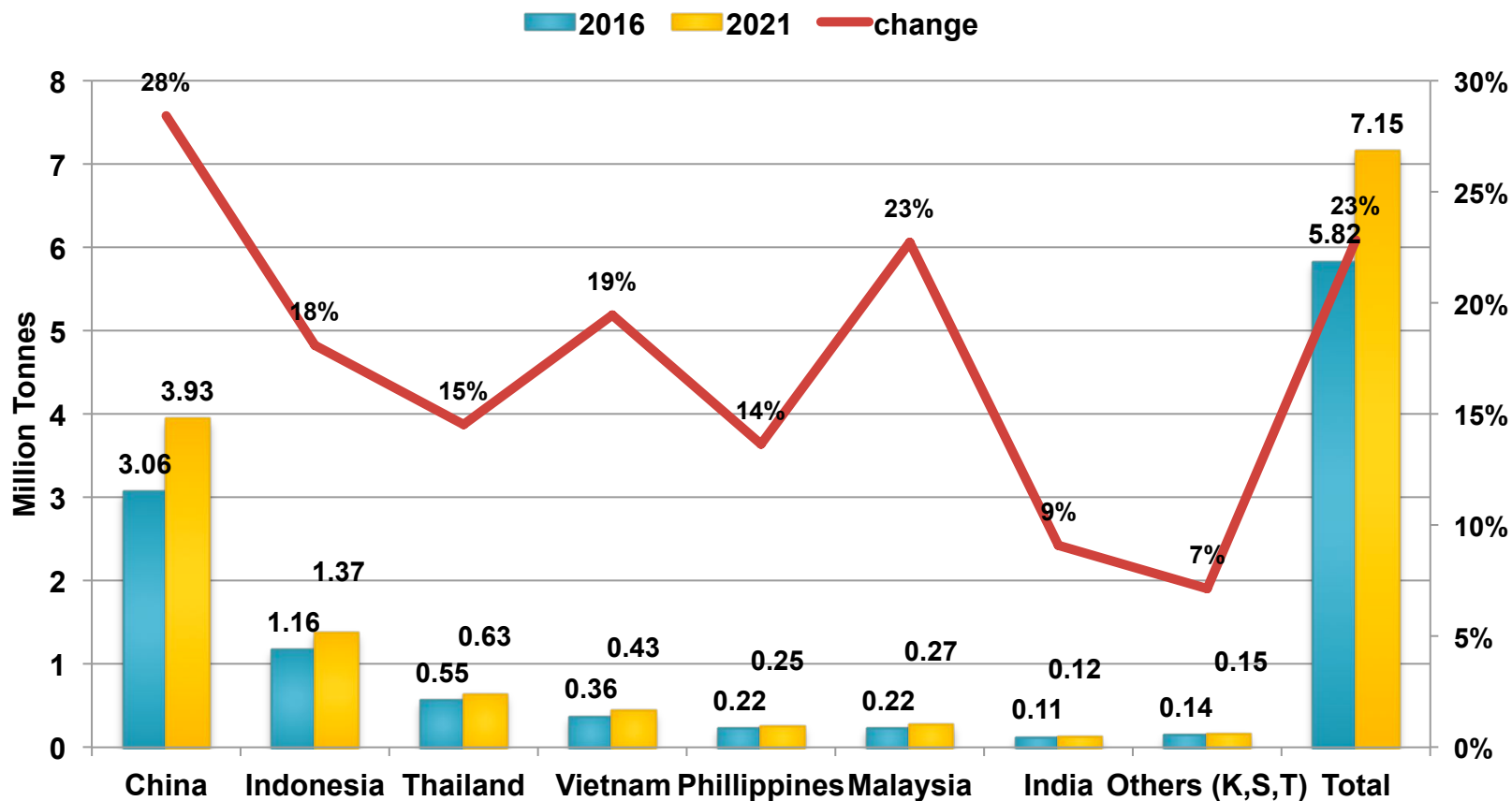
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GHG emissions in study countries due to BMS (2016), projections (2021) and % change



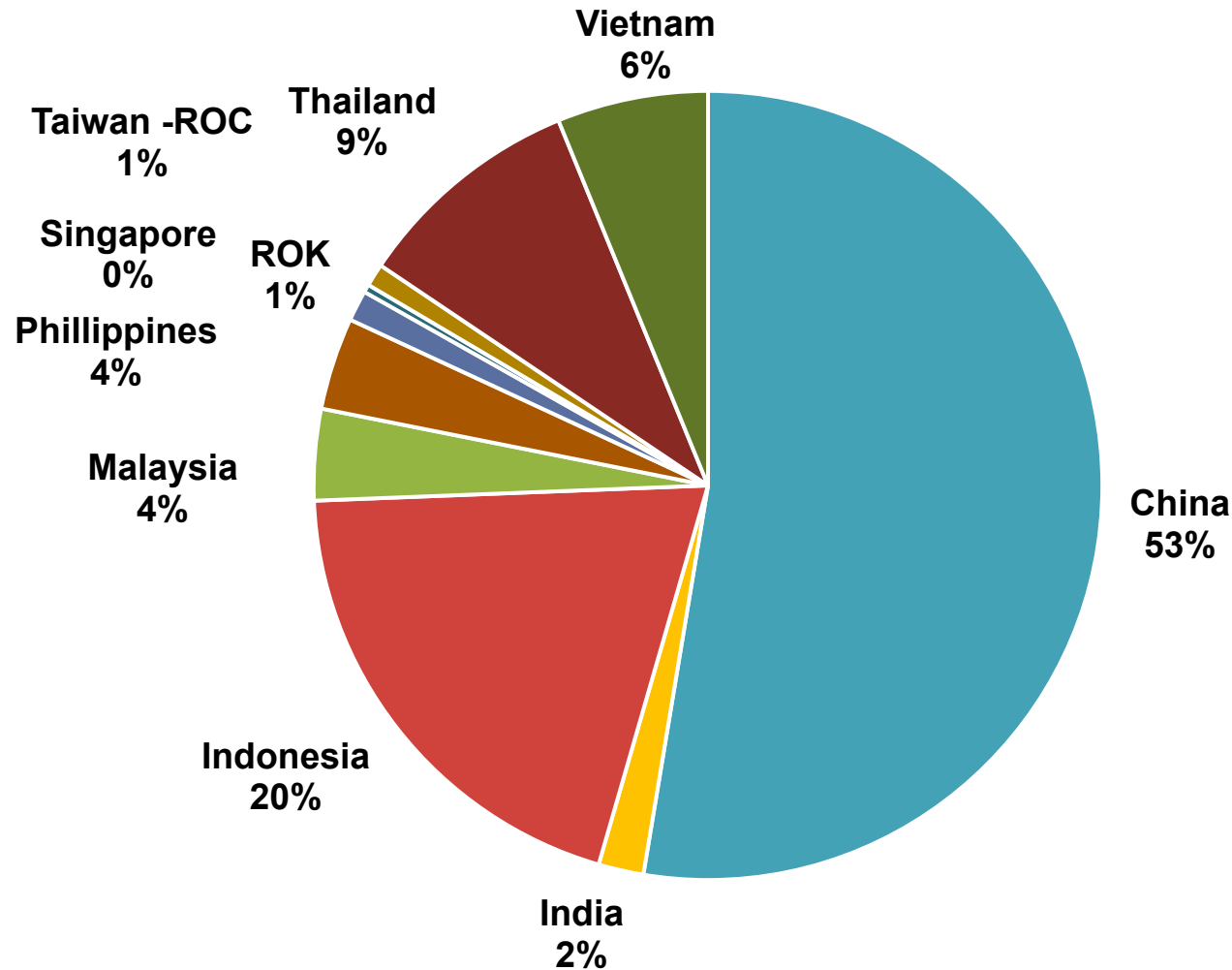
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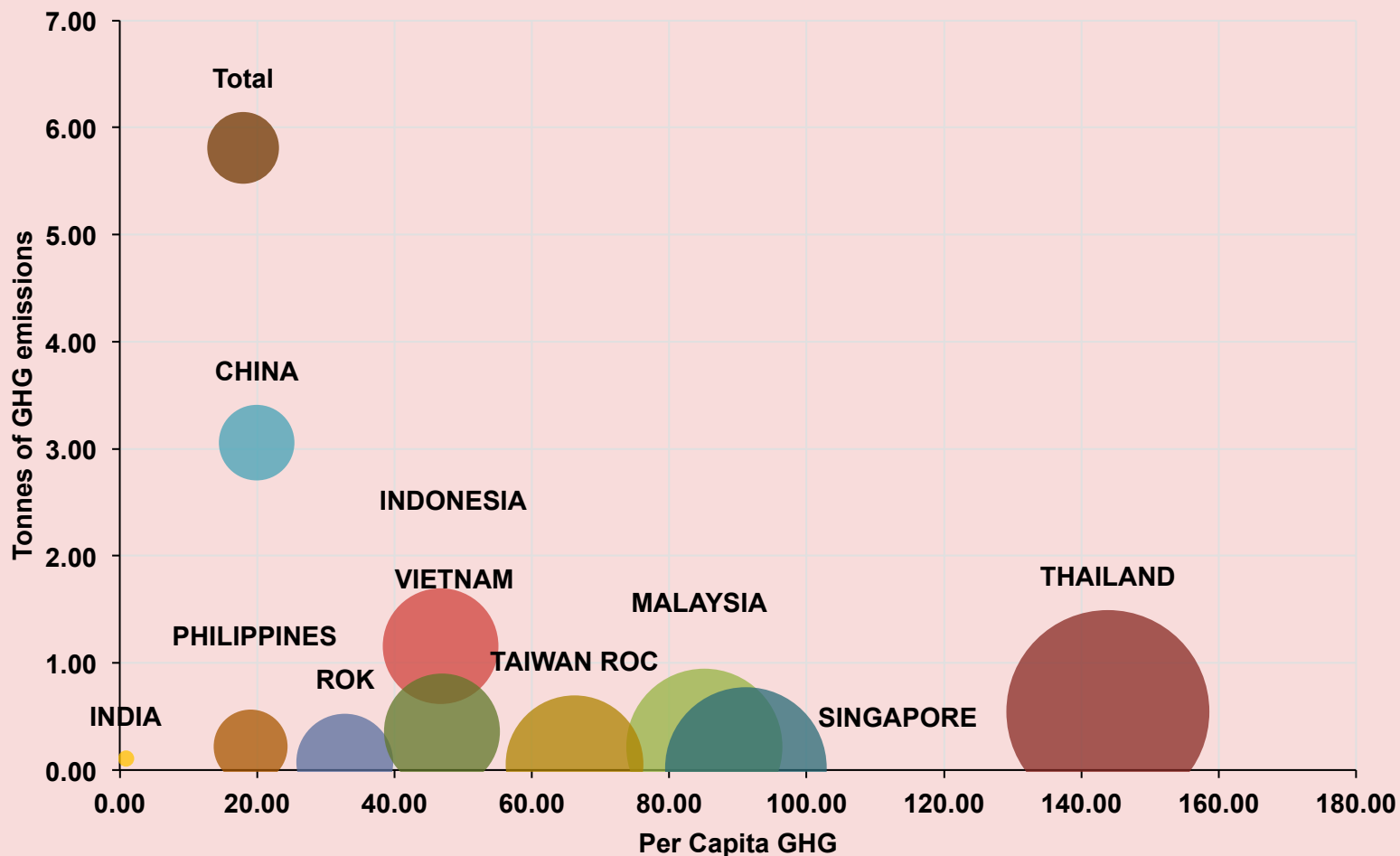
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Country-wise contribution to GHG emissions due to BMS (2016)



China India Indonesia Malaysia Philippines ROK Singapore Taiwan -ROC Thailand Vietnam

Per Capita GHG emissions Kg CO2 eq



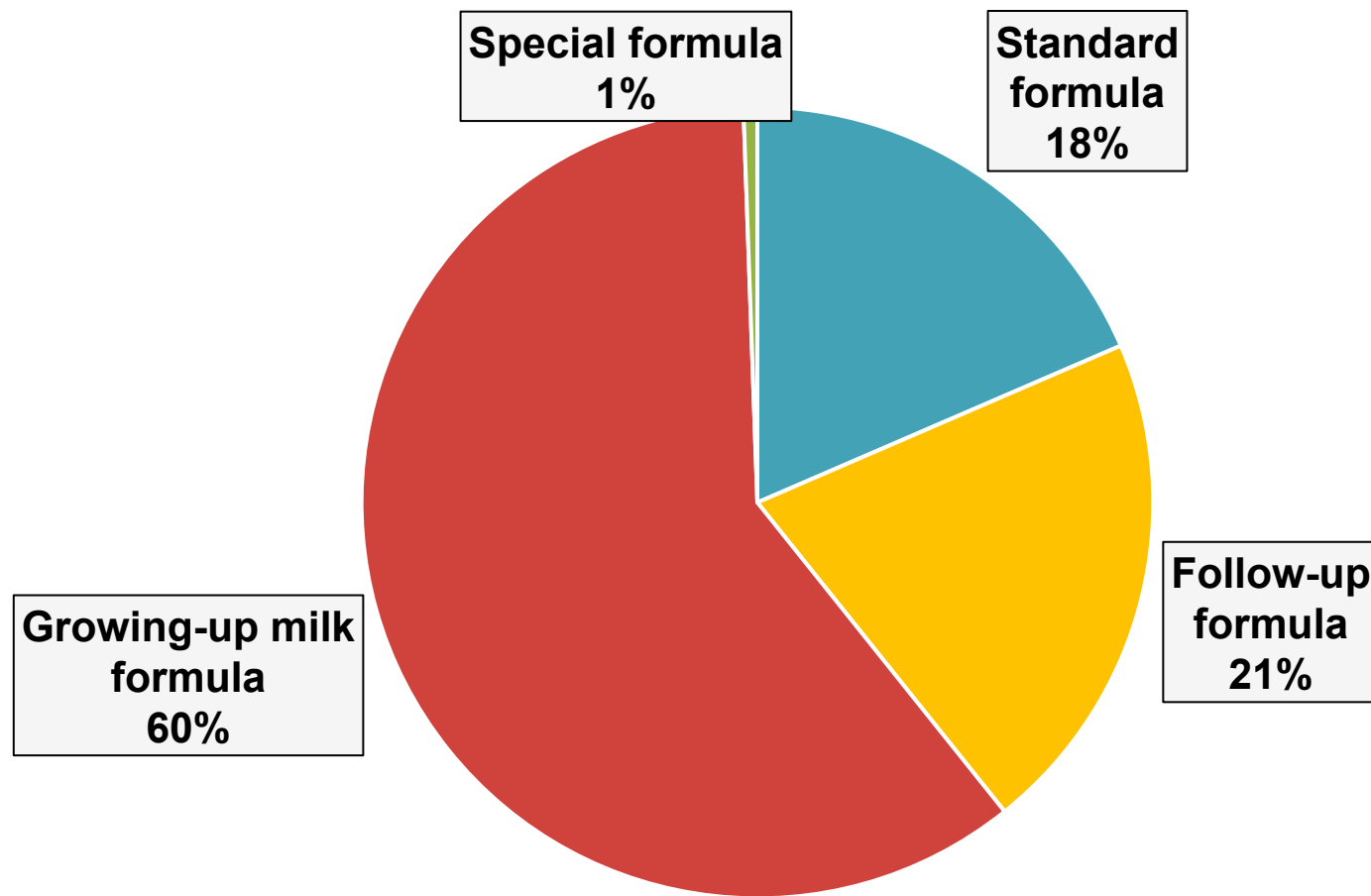
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Contribution of GHG Emissions by different type of BMS in study countries – 2016 (n=10)



Total GHG emissions 5.82 M Tonnes

Type of BMS which is leading contributor to GHG emissions in countries (2016)

Country	Standard formula	Follow-up formula	Growing-up milk formula	Special formula
China	24%	27%	49%	0%
India	44%	44%	10%	2%
Indonesia	11%	13%	75%	0%
Malaysia	8%	11%	80%	1%
Phillippines	26%	23%	49%	3%
ROK	36%	35%	27%	1%
Singapore	8%	9%	72%	11%
Taiwan -ROC	18%	17%	58%	7%
Thailand	6%	3%	90%	1%
Vietnam	7%	13%	79%	0%



How significant is GHG produced by BMS

Food Item (1 kg)	GHG emissions in Kg CO2 eq
BMS (Only production)	Standard infant formula – 3.95 FUF/GUM formula – 4.05
Chicken	4.7
Fish	3.1
Egg	3.0
Milk	1.0
Bean	0.86
Rice	1.2
Wheat	0.58
Potato	0.19
Apple	0.28



Equivalent activities for total GHG emission due to milk formula in study countries (5.82 M tonnes)

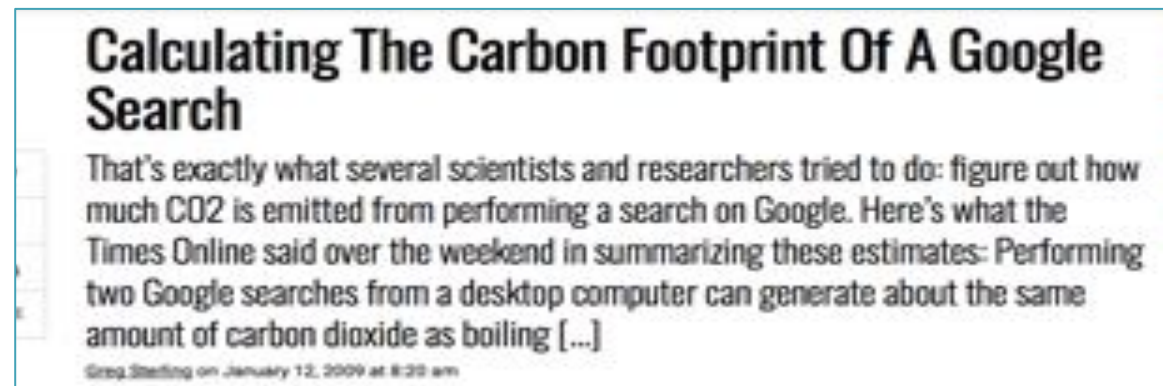
Equivalent to annual Greenhouse Gas emissions from	14.2 Billion Miles driven by an average passenger vehicle
Greenhouse Gas emission avoided by	221 Million Incandescent lamps switched over to LEDs
Carbon sequestered by any one of these	96.2 Million tree seedlings grown for 10 years
	6.8 Million acres of U.S. forests in one year

<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Equivalent activities for total GHG emission due to milk formula in study countries (5.81 M tonnes)



7.5 Billion copies of the Guardian newspaper, recycled



828 Billion typical Google searches made



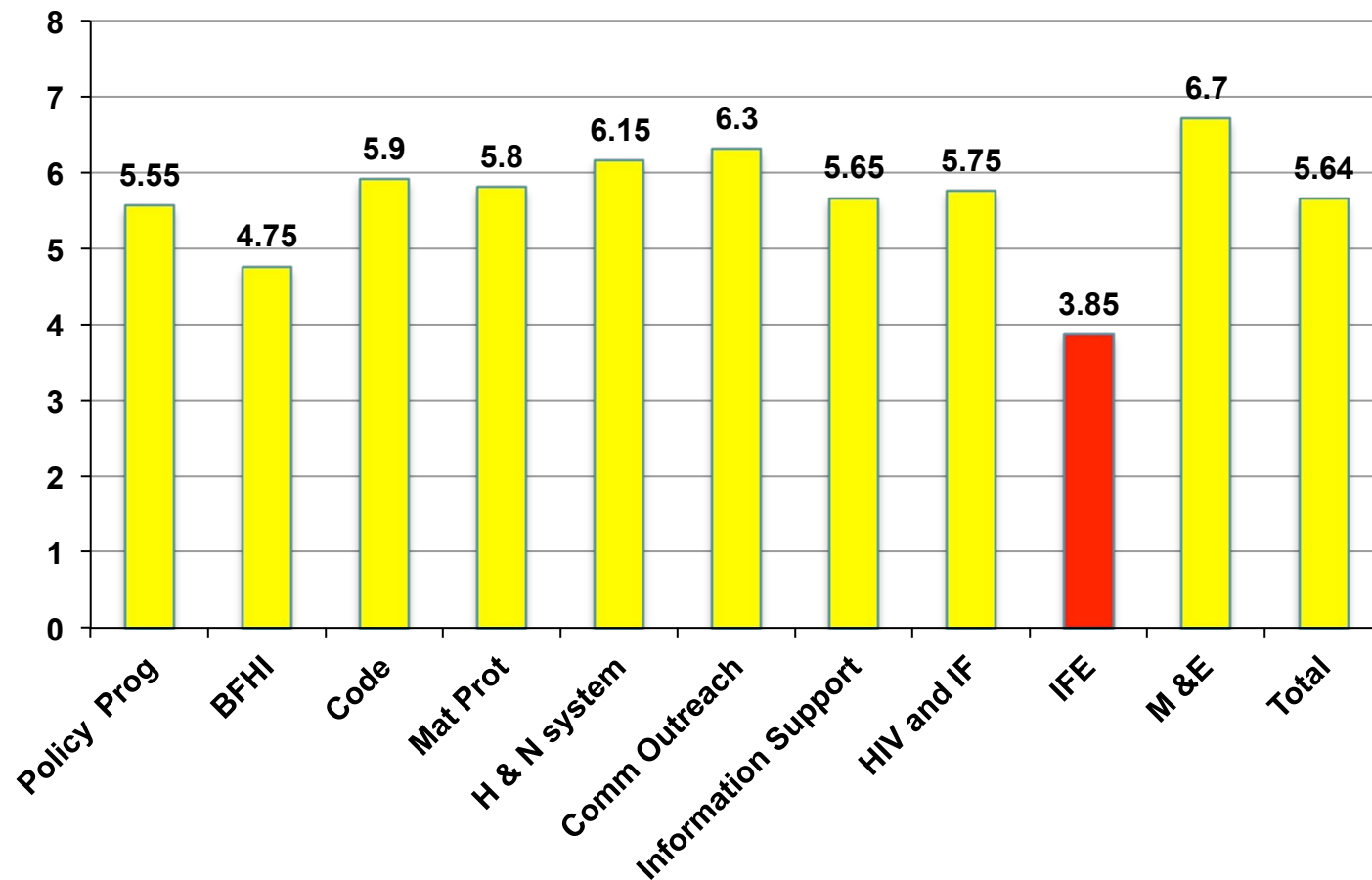
<https://www.theguardian.com/environment/green-living-blog/2010/nov/04/carbon-footprint-newspaper>

<https://searchengineland.com/calculating-the-carbon-footprint-of-a-google-search-16105>

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Average WBTi Policy & Programme Indicator Score (n=10)



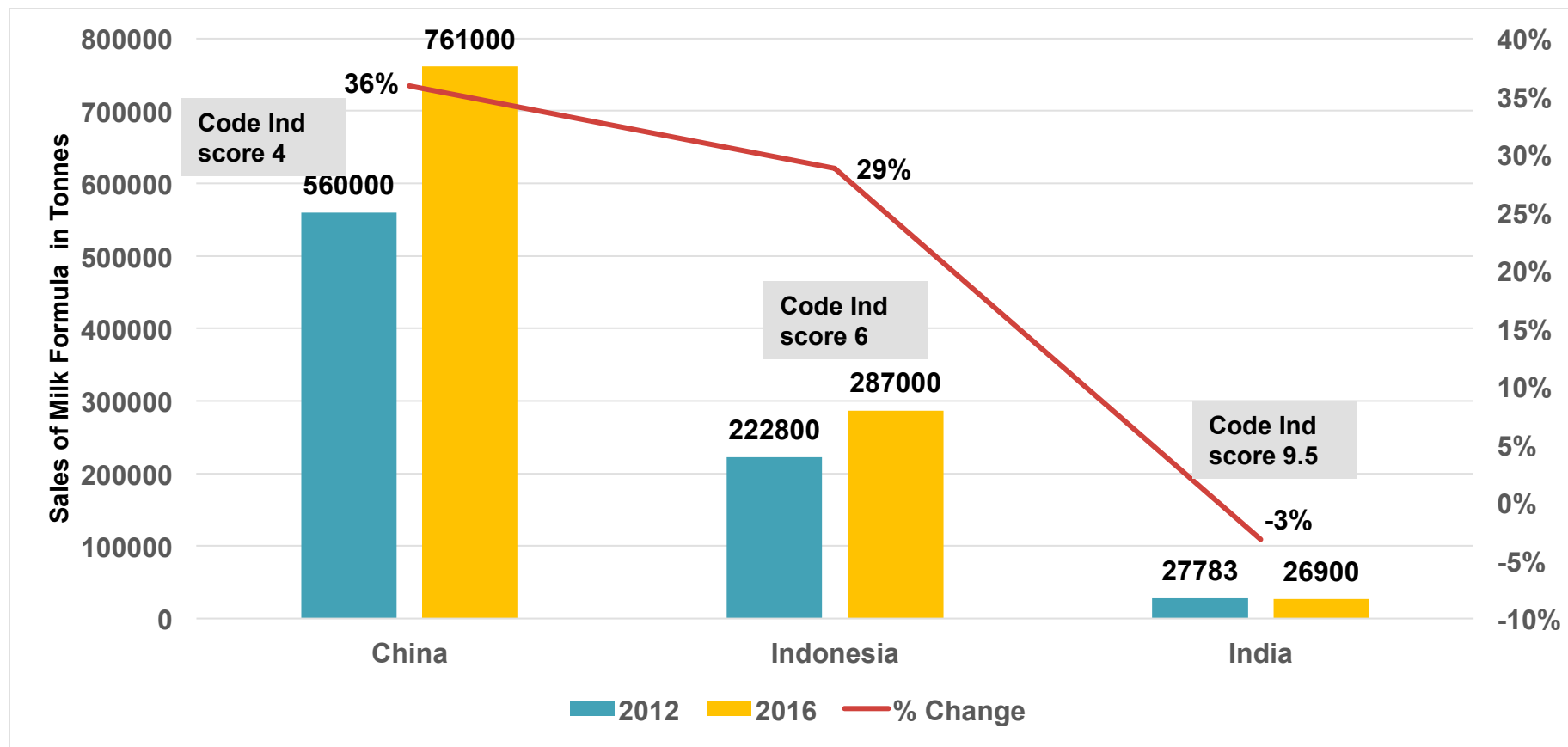
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Trends in sales of BMS in some select Asian Countries and their WBTi score for the Code implementation



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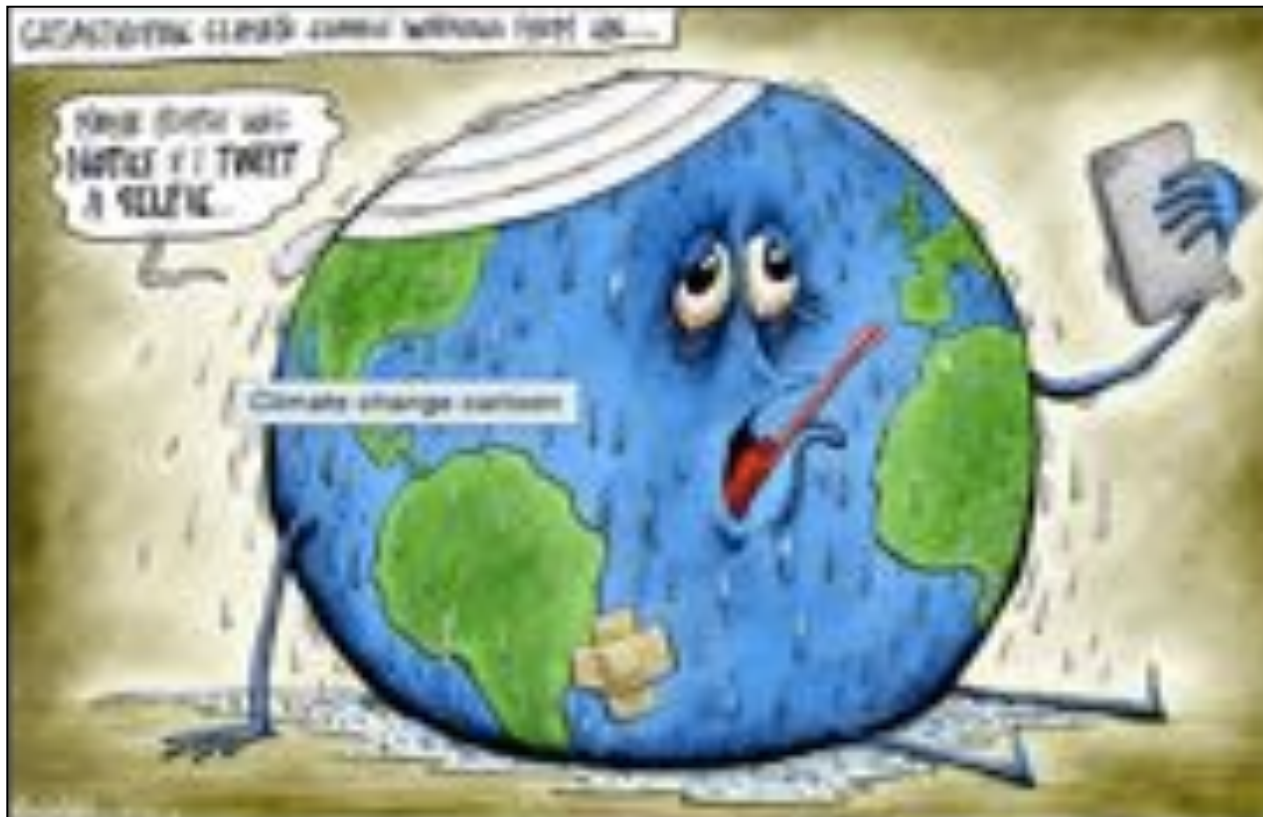


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Conclusions

- Environmental impact of BMS use is significant
- It is being increasingly being recognized globally
- FUF and GUM are the leading category among BMS for GHG emissions
- Urgent action is required for enhancing breastfeeding and decreasing BMS use
 - Strengthening of Policy and Programmes for Protection, Promotion and Support of Breastfeeding
 - Effective implementation of the International Code of Marketing of BMS





Thanks for
your attention!

<https://www.englishblog.com/2014/04/cartoon-climate-change-selfie.html#.Xci9rq2ZPBI>



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Acknowledgment

- Dr. Julie Smith, Economist, Australian National University
- Naomi Hull, IBCLC, RN, Australia
- Dr. Phillip Baker, Australian National University
- IBFAN country coordinators from 10 Asian countries